

111 Amendment
10/630,778 (60000500-1012)
Page 2

PATENT

AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph beginning on line 18 of page 3 as follows:

As an alternative and replacement to bond wires, die bumps are used in a die attachment known as the flip-chip method. However, the flip-chip method does not work well with MMICs that have been designed using conventional RF design and layout rules. Microwave structures such as micro-strips and strip-lines have their unique RF characteristics depending on their spacing[[,]] and the media above and ground plane below them. Currently, there are only a few design and layout tools to support flip-chip mounted microwave devices under development.

Please amend the first fill paragraph on page 8 as follows:

FIG. 1 The Figure illustrates a schematic cross-sectional view of a microwave package 100 consistent with the present invention, showing the construction and layer build-up of one semiconductor package.

Please amend the paragraph beginning on line 21 of page 8 as follows:

In one embodiment consistent with the present invention, a Silicon Carbide (SiC) sealant coating, or a SiC over Benzocyclobutene (BCB) (as an Interlayer Dielectric) sealant coating, (for example, Chip Seal™ made by Dow Corning) is disposed topside of the GaAs MMIC 102 to form a near-hermetic seal. The sealant used in the present invention is applied by a standard process technology, and is compatible with all current MCM interconnection approaches, including wire bond TAB, flip-chip, etc. The sealant may form a layer of approximately 4000 Angstroms on the MMIC 102, and is deposited directly on the passivation layers (0.5 μ m/10 μ m) on the topside of the MMIC 102. The near-hermetic passivation layers (0.5 μ m/10 μ m) on the topside of the MMIC 102 cover air bridges. The

111 Amendment
10/630,778 (60000500-1012)
Page 3

PATENT

SiC coating will seal the microchips from inorganic and organic liquid and vapors.

Please amend the third full paragraph on page 11 as follows:

Finally, in one embodiment consistent with the present invention there is a non-metallic or metallized Liquid Crystal Polymer (LCP) cover 107, which may be epoxied or solder attached in place, respectively, attached with epoxy or solder and used to protect the device 100 from mechanical damage due to handling. The cover may be disposed on the conformal-coated MMIC.